

AMENDMENTS TO THE SPECIFICATION:

Please amend the indicated paragraphs of the specification in accordance with the amendments indicated below.

Page 1: 3rd full paragraph, amend as indicated below:

However, in the case of such a structure where a motor and a gear support the weight of a test head as seen in conventional examination equipment such as a probe device, the gear for transmitting a driving force of the motor unavoidably becomes larger in size and the gear is apt to have a multi-stage structure, thus causing the equipment to be complicated and expensive. Furthermore, there are also the following problems: turning the test head around the enlarged gear makes it difficult to reduce the turning radius and requires an increase in an installation space for the ~~prove~~ probe device.

Page 2: 1st full paragraph, amend as indicated below:

To achieve the above-mentioned object, according to a first aspect of the present invention, there is provided a turning device for a heavy object comprising: a turning arm joined to the heavy object and turning around a turning pivot on the axial line and a drive device for driving turning operations of the turning arm

wherein: the drive device is composed of: a fixing section, a turning input section, a turning output section having an orthogonal plane orthogonal to the axial line of the turning pivot, a planetary gear type speed reducer with a pair of ball bearings disposed between the fixing section and the turning output section and a motor including a rotor shaft coaxially connected to a stator having a coil and the turning input section of the planetary gear type speed reducer; the turning arm has a first plane connected to the plane of the turning output section and a second plane connected to the heavy object, positioned nearer to the heavy object from the axial line of the turning pivot and orthogonal to the first plane; and the turning arm and the drive device are disposed within a width ~~of the turning pivot~~ of the heavy object in the axial direction of the turning pivot.

Page 3: 1st full paragraph, amend as indicated below:

According to a fifth aspect of the present invention, in a turning device comprising: a turning arm joined to a heavy object and turning around a turning pivot on the axial line and a drive device for driving turning operations of the turning arm wherein: the drive device includes a fixing section, a rotation input section, a rotation output section having an orthogonal plane orthogonal to the axial line of the turning pivot, a planetary gear type reducer having a pair of ball bearings disposed between the fixing section and the rotation output section, and a motor disposed coaxially to

the rotation input section of the planetary gear type speed reducer; the turning arm has a first plane joined to the plane of the rotation output section and a second plane orthogonal to the first plane; and the turning arm and the drive device are disposed within a width ~~in the axial direction of the turning pivot~~ of the heavy object in the axial direction of the turning pivot.

Pages 3-4: paragraph bridging pages 3 and 4, amend as indicated below:

Such a configuration provides a compact turning device for a heavy object which permits the turning arm and the drive device to be positioned within a width ~~of the turning pivot~~ of the heavy object in the axial direction of the turning pivot by reducing a distance between the center of gravity of the heavy object and the axial line A of the turning pivot.

Page 5: 2nd full paragraph, amend as indicated below:

Such a configuration provides a compact turning device for a heavy object which permits the turning arm and the drive device to be positioned within the width of the turning pivot of the heavy object.

Page 5: 5th full paragraph, amend as indicated below:

FIG. 3 is a side view showing a frame and a drive device of the turning device for a heavy object according to the present invention, ~~taken from~~ as viewed in an arrow E direction shown in FIG. 2;

Page 5: 7th full paragraph, amend as indicated below:

FIG. 5 is a side view illustrating the frame and the drive device of the turning device for a heavy object according to the present invention, ~~taken from~~ as viewed in an arrow G direction shown in FIG. 3; and

Page 8: 2nd full paragraph, amend as indicated below:

A reference numeral 20 denotes a front-stage speed reducer, which mainly consists of: a cylindrical inner teeth gear body 21 serving as a fixed section having a plurality of internal teeth pins 24c as internal teeth on an inner-periphery section; a pair of external teeth gear 24c of which external teeth of peritrochoide tooth profile mesh with the internal teeth pin ~~[[24c]]~~ 24c2 of the internal teeth gear body 21 for eccentric oscillation; a pinion gear 17f formed on the rotor shaft 17c as an input section; a shaft 23 as a rotation output section; and a planetary gear type speed

reducer 24 having main bearings 24a, 24b as a pair of ball bearings at the previous and subsequent stages disposed between the internal teeth gear body 21 and the shaft 23.

Page 9: 1st full paragraph beginning at line 2, amend as indicated below:

The subsequent-stage speed reducer 26 consists of: a cylindrical internal teeth gear body ~~[[28]]~~ 21 as a fixed section having a plurality of internal teeth pins 30c2 as internal teeth mainly on the inner-periphery section; a pair of external teeth gear 30c in which external teeth of peritrochoid tooth profile mesh with the internal teeth pins 30c2 of the inner teeth gear body 21 for eccentric oscillation; a pinion gear 26b formed on the rotor shaft 26a as a rotation input section; a shaft 29 as a rotation output section; and planetary gear type speed ~~reducers~~ reducer 31 having main bearings 30a, 30b as a pair of ball bearings at the previous and subsequent stages disposed between the inner ~~tooth teeth~~ gear body ~~[[28]]~~ 21 and the shaft 29. The rotor shaft 26a is connected to the second end plate 23c.

Page 10: 1st full paragraph beginning at line 2, amend as indicated below:

The center position C ~~[[in]]~~ along the direction of the axial line A of the turning pivot of the turning arm 11 of the heavy object, such as the test head 5, is set

within a distance L between the main bearing 30b as a ball bearing positioned on the orthogonal plane side of a rotation output section, out of the pair of ball bearings, and an intersection P obtained by crossing the axial line A of the turning pivot with a line B which forms a bearing contact angle α ($^\circ$) to the perpendicular line of the main bearing 30b. Preferably, the contact angle α ($^\circ$) is to be set within the range from $35(^\circ)$ to $45(^\circ)$. Such a configuration can support a heavy object such as the test head 5 in a cantilever manner and stably turn the heavy object.

Page 10: 2nd full paragraph, amend as indicated below:

On the first plane 11a side of the turning arm 11, bolt insertion holes 11d, 11d, having slightly longer diameter are circumferentially arranged at desired intervals as shown in FIG. 5. By screwing bolts 11e, 11e shown in FIG. 4 into the bolt insertion holes 11d, 11d, to engage shaft holes 29e (see Fig. 6), vertical or horizontal positioning movement of the drive device 12 in the rotational direction is adjusted to fix it to the turning arm 11.

Page 10: 4th full paragraph, amend as indicated below:

The motor 17 rotates at a high speed so that a turning operation of a heavy object such as the test head 5 may be driven between a position indicated by a solid

line and a position indicated by a virtual line as shown in FIG. 1. Thus, the rotor 17d rotates at a high speed inside the cylindrical stator 17b to rotate the rotor shaft 17c connected directly to the rotor 17d and supported by a bearing 26c. A rotational force is transmitted to the spur gear 23g engaged with the pinion gear 17f formed on the rear end of the rotor shaft 17c and, by the rotation of the spur gear 23g, the crank shaft 23f having a crank section in the rough center rotates while being supported by a pair of bearings disposed on the shaft 23.

Page 11: 1st full paragraph, amend as indicated below:

Next, a rotational force of the shaft 23 decelerated to the first stage as described above is transmitted to the rotor shaft 26a as a rotation input section, and the rotor shaft 26a rotates at a speed decelerated by the previous-stage speed reducer 20. A rotational force is transmitted to the spur gear 29g engaged with a pinion gear 26b formed on the rear end of the rotor shaft 26a. By the rotation of the spur gear 29g, the crank shaft 29f having a crank section 29h in the rough center rotates while being supported by main bearings 30d, 30e disposed adjacent to each other in front of the spur gear 29g. A rotational force of the crank shaft 29f is transmitted to the external teeth gears 30c, 30c configured in two rows adjacent to each other. The rotation action of the external teeth gears 30c, 30c further decelerates the rotation of the first end plate 29a and the second end plate 29c having the column 29b of the

shaft 29 as a rotation output section. The second end plate 29c is connected to the first plane 11a of the turning arm 11 so as to be adjacent to each other by the bolts 11e, 11e, to decelerate the driving force of the turning arm 11.